

REMARKS

This patent application presently includes Claims 1-12, all of which stand rejected. All rejections are respectfully traversed.

Claims 1-6 were rejected as anticipated by Yatsuda, U.S. Patent No. 5,521,453. This rejection is respectfully traversed. Yatsuda does not teach or even suggest the claimed invention.

In accordance with the present invention, a surface acoustic wave filter comprises a longitudinally-coupled--mode resonator filter connected in series with a resonator having at least one inter-digital transducer and the upper cutoff frequency of the longitudinally-coupled double--mode resonator filter is substantially equal to the antiresonant frequency of the resonator.

The examiner asserts that Yatsuda discloses this feature, citing to Column 10, Lines 23-27. However, Yatsuda merely discloses that the resonators have "antiresonant frequencies...that are close to and higher than the passband of the two-port surface acoustic wave resonator filter." Those skilled in the art would understand from Yatsuda that this means that the antiresonant frequency of the resonator must be placed above or outside the passband of the filter. Thus, Yatsuda teaches away from the feature of the present invention that the antiresonant frequency of the resonator must be substantially equal to the upper cutoff frequency of the passband of the filter. Claim 1 is therefore allowable over Yatsuda.

Claims 2-6 depend from Claim 1 and are allowable over Yatsuda based upon their dependence from an allowable claim.

Claims 1-6 were also rejected as anticipated by Nagatsuka et al. JP 6-260876. This rejection is respectfully traversed.

Nagatsuka does not teach or suggest the invention of these claims. Nagatsuka discloses setting the antiresonant frequency f_a of a resonator substantially equal to a frequency f_s at which a spurious output is caused in the output signal of the SAW filter 5.

The undersigned is advised that this is set forth specifically in Paragraph [0038] of the Japanese specification. Thus, the description discloses that the antiresonant frequency of the resonator is going to be set higher than the high frequency cutoff of the SAW filter, as in Yatsuda. Accordingly, Claims 1-6 are allowable over Nagatsuka for the same reason that they are allowable over Yatsuda.

Claims 1-6 were rejected as anticipated by Hirota et al. JP 10-65481. This rejection is respectfully traversed. Hirota does not teach or suggest the claimed invention.

For the examiner's convenience, the undersigned has enclosed a translation of Hirota which was obtained from the Japanese Patent Office website.

Referring to the last sentence of the abstract, the examiner is directed to the

statement that "the antiresonant frequency is set to be on the high frequency side of the passband of the filter."

The examiner should also refer to Paragraph [0006] of the detailed description and Fig. 8 to which it refers. Clearly, Hirota contemplates that the antiresonant frequency be above or outside the passband of the filter. Accordingly, Claims 1-6 are allowable over Hirota for the same reasons that they were allowable over Yatsuda and Nagatsuka.

Claims 7-12 were rejected as anticipated by Fujii, U.S. Patent No. 6,462,632. This rejection is respectfully traversed. Fujii does not teach or suggest the invention of the present claims.

In accordance with Claim 7, a surface acoustic wave filter comprises a longitudinally-coupled double-mode resonator filter in series with a resonator having at least one inter-digital transducer, and the pitch of the electrode fingers of the inter-digital transducer of the resonator is larger than the pitch of the electrode fingers in the inter-digital transducers of the filter. Fujii discloses withdrawal to decrease the anti-resonant frequency while maintaining the resonant frequency. Nevertheless, the antiresonant frequency is still outside and above the upper cutoff frequency of the passband, as can be clearly seen in Fig. 17.

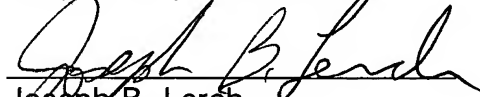
Also, the examiner's reliance on Fig. 13 is misplaced. Fujii discloses nothing about the relative pitch between electrode fingers in the resonator and the filter. Accordingly, Claim 7 is allowable over Fujii.

Claims 8-12 depend from Claim 7 and are believed to be allowable based upon their dependence from an allowable claim.

In view of the foregoing, all claims are now believed to be in condition for allowance and allowance of the application is therefore appropriate.

Applicant's attorney has made every effort to demonstrate that this application is in condition. It is therefore earnestly requested that the application, as a whole, receive favorable reconsideration and that all of the claims be allowed as presently constituted. Should there remain any unanswered questions, the examiner is requested to call the applicant's undersigned attorney at the telephone number given below.

Respectfully submitted,



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